



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/766,213

01/29/2004

Mitsuhiro Yuasa

01165.0911

3344

22852 7590 01/22/2008
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

STARK, JARRETT J

ART UNIT

PAPER NUMBER

2823

MAIL DATE

DELIVERY MODE

01/22/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/766,213	Applicant(s) YUASA, MITSUHIRO	
	Examiner Jarrett J. Stark	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-28 is/are pending in the application.
- 4a) Of the above claim(s) 26-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/29/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Newly submitted claim 26-28 directed to inventions that are independent or distinct from the invention originally claimed for the following reasons: See restriction requirement mailed 3/5/2007 and subsequent election received 4/20/2007.

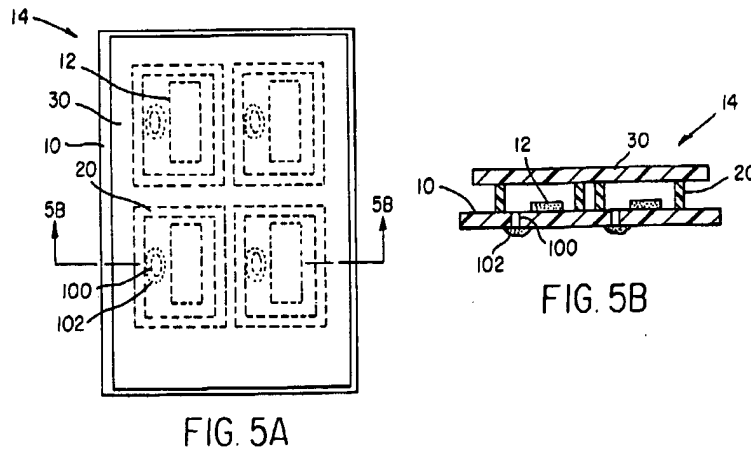
Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 26-28 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-22 and 24-25 are rejected under 35 U.S.C. 103(a) as being obvious over Borson et al. (US 6,470,594 B1).



Regarding claim 19, Borson discloses a method for packing a plurality of Micro Electro Mechanical System (MEMS) devices formed on a semiconductor substrate, the method comprising the steps of:

covering a plastic film over the semiconductor substrate; pressing the plastic film onto the semiconductor substrate (Borson, Figs. 5A-B and Col. 8 line 50 to Col. 9 line 56); and

bonding the plastic film and the semiconductor substrate around a perimeter of each of the plurality of MEMS devices formed on the semiconductor substrate, by radiating light through the plastic film and into the semiconductor substrate (Borson, Figs. 5A-B and Col. 8 line 50 to Col. 9 line 56);

Borson does not disclose wherein the light has a wavelength that is absorbed into the semiconductor substrate but not into the plastic film. Borson just broadly states that the heat can be provided by radiant energy "such as UV radiation." It would be obvious to one of ordinary skill in the art at the time the invention was made to

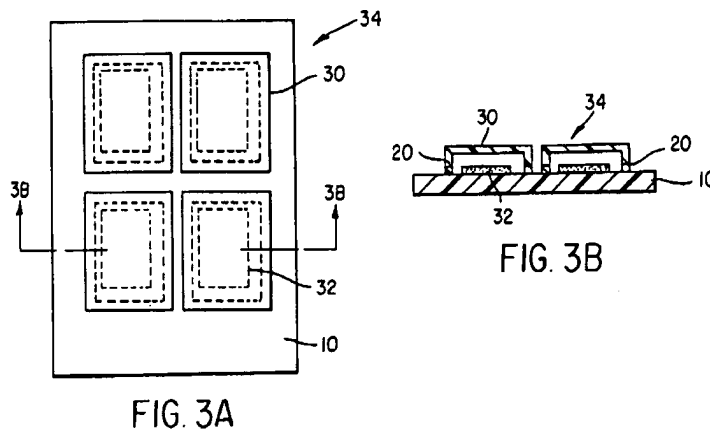
choose any desirable radiant energy wavelength. Selecting a wavelength is merely optimization of a result effective variable.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal value for the wavelength through routine experimentation and optimization to obtain optimal or desired device performance because the wavelength is a result-effective variable and there is no evidence indicating that it is critical or produces any unexpected results and it has been held that it is not inventive to discover the optimum or workable ranges of a result-effective variable within given prior art conditions by routine experimentation. See MPEP § 2144.05

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. KSR Int'l Co v. Teleflex Inc.

Regarding claim 20, Boroson discloses the method set forth in claim 19, further comprising the step of adjusting the temperature of the semiconductor substrate to a predetermined degree (Boroson, Figs. 5A-B and Col. 8 line 50 to Col. 9 line 56).

Regarding claim 21, Boroson discloses the method set forth in claim 19, wherein the plastic film has an alignment mark to be aligned with the semiconductor substrate (Boroson, Figs. 3A-B).



Regarding claim 22, Boroson discloses the method set forth in claim 19, wherein the plastic film has a plurality of recesses corresponding to the plurality of MEMS devices (Boroson, Figs. 3A-B).

Regarding claim 24, Boroson discloses the method set forth in claim 19, however does not specifically disclose wherein the plastic film is a thermoplastic film. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a "thermoplastic", since it has been held to be within the general skill of a worker in the art to select a known material on the base of its suitability, for its intended use involves only ordinary skill in the art. *In re Leshin*, 125 USPQ 416.

Regarding claim 25, Boroson discloses the method set forth in claim 19, wherein an adhesive is applied to a bonding part of the plastic film so as to bond to the semiconductor substrate around perimeters of the plurality of MEMS devices (Boroson, Figs. 3A-B).

Claims 23 rejected under 35 U.S.C. 103(a) as being obvious over Boroson et al. in view of Beroz et al. (US 6,338,982 B1).

Regarding claim 23, Boroson discloses the method set forth in claim 19, however does not teach wherein light shielding materials are applied to predetermined parts of the plastic film. This feature was however known in the art at the time of the invention. It is disclosed by Beroz that when forming semiconductor/MEMs packaging structures, it was well known to bond flexible transparent films to opaque frames (Beroz, Abstract, [0007], [0011], [0053])

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jarrett J. Stark whose telephone number is (571) 272-6005. The examiner can normally be reached on Monday - Thursday 7:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Application/Control Number:
10/766,213
Art Unit: 2823

Page 8

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jarrett J Stark
Examiner
Art Unit 2823

JJS
January 8, 2008


MICHELLE ESTRADA
PRIMARY EXAMINER